

REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

Applicant respectfully request reconsideration in view of the present amendment. Attached hereto is a marked-up version to show the changes made to the application by the present amendment.

Claims 36 - 46 were rejected under 35 USC § 112, second paragraph as being indefinite. Claims 36 - 46 have been amended to remove the Examiner's grounds for rejection under § 112. Reconsideration and withdrawal of the rejection under 35 USC § 112 is requested. Also, because claims 39 and 41 - 43 have not been rejected based on the cited art it is respectfully submitted that claims 39 and 41 - 43 are allowable. Notice to that effect is requested.

Amended claims 36 - 39 and 41 - 46 are directed to "a combination of a joining element and a part" whereas new claims 48 - 57 are directed to "a joining element", per se, to address the rejection under 35 USC § 112, second paragraph, to original claims 36 - 47.

Claims 36 - 38, 40, and 44 - 46 were rejected under 35 USC § 102(b) as being anticipated by Hirakawa, Eakins, or Luth. Generally, Hirakawa, Eakins, and Luth are drawn to plastic rivets. Eakins discloses a plastic rivet formed of a thermoplastic resin and a rubber (Col. 3, line 25). But, they are "preferably thoroughly mixed." (Col. 3, line 29). Luth discloses a plastic rivet that is

thermoplastic throughout (Col. 1, line 5). Hirakawa discloses a headed pin 1 of thermoplastic resin (Abstract, line 3). None of the cited references disclose a joining element where part of the body is a thermoplastic material and another part of the body is not a thermoplastic material.

With reference to amended claim 36, none of Hirakawa, Eakins, or Luth disclose or suggest a body member having first and second thermoplastic materials at respective first and second anchor points, as required by amended claim 36. Rather, Hirakawa discloses a fusing of material (Abstract, para. 2), Eakins discloses a rivet with an elastic memory (Col. 5, line 20), and Luth discloses a rivet in which the plastic is softened to form a second head (Col. 1, line 42). Accordingly, none of the cited references anticipate amended claim 36. Reconsideration and withdrawal of the rejection of claim 36 is respectfully requested.

With reference to amended claim 37, none of Hirakawa, Eakins, or Luth disclose a "body portion being responsive to an application of pressure to said head portion, and of energy to said thermoplastic material, so as to form a macroscopic cavity in the part at the closed inner end." Instead, Hirakawa, Eakins, and Luth disclose plastic rivets that are reshaped by heat so as to form a connection. Accordingly, none of the cited references anticipate amended claim 37. Reconsideration and withdrawal of the rejection of claim 37 is respectfully requested.

Claims 38 and 44 - 46 depend from allowable independent claim 37 and define further features of the invention. Notwithstanding the foregoing, claim 44 is independently allowable over the cited references. None of the cited references disclose or suggest a joining element wherein the "first end is shaped as a point." Accordingly, the cited references do not anticipate claim 44. Claims 38 and 44 - 46 are thus allowable over the cited references and notice to that effect is requested.

Claim 47 has been cancelled. It is respectfully submitted that the allowability of claims 23 - 35 is unchanged by the present amendment. Applicant notes that claims 23 - 35 are thus allowable, and that claims 37 - 43 are patentable over the cited references. Notice to that effect is requested.

New claims 48 - 57 are added to define further features of the invention. As noted above, new claims 48 - 57 are directed to "a joining element" per se. None of Hirakawa, Eakins, or Luth anticipates new claims 48 - 57, as discussed below.

With reference to new claim 48, none of Hirakawa, Eakins, or Luth discloses a "body having a cross-sectional area at said second anchoring point that is larger than a cross-sectional area at said first anchoring point." Rather, Hirakawa, Eakins and Luth disclose headed pins, each of the pins having a uniform cross-sectional area. Accordingly, none of the cited references anticipate new claim 48. Applicant submits that new claim 48 is allowable over the cited art and notice to that effect is requested.

With reference to new claim 49, none of Hirakawa, Eakins, or Luth discloses "at least part of the remainder of the body being from a different material." Instead, Hirakawa discloses a thermoplastic resin. (Abstract, second para.), Eakins discloses a vulcanized rubber/thermoplastic resin mix (Col. 2, line 33) that is thoroughly mixed (Col. 3, line 30), and Luth discloses merely a thermoplastic material. (Col. 2, lines 55 - 58). Accordingly, none of the cited references anticipates new claim 49. Applicant submits that new claim 49 is allowable over the cited art and notice to that effect is requested.

New claims 50 - 57 depend from independent claim 49 and define further features of the invention. Thus, applicant submits that 50 - 57 are also allowable over the cited references. Notice to that effect is requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge the same to our Deposit Account No. 18-0160, our Order No. FRR-32641.

Respectfully submitted,

RANKIN, HILL, PORTER & CLARK LLP

By


David E. Spaw, Reg. No. 34732

700 Huntington Building
925 Euclid Avenue
Cleveland, Ohio 44115-1405
(216) 566-9700
Customer No. 007609
Attachment: Marked-up version of amendment

IN THE CLAIMS:

The claims have been amended as follows:

36. (Amended) A combination of a joining element and a part, said part defining[for attachment] a bore, said bore having a closed inner end, an open outer end, and a cylindrical inner surface, said inner surface having a first cylindrical portion adjacent to said closed inner end, and a second cylindrical portion disposed between said first cylindrical portion and said open outer end, said second cylindrical portion having a diameter larger than said first cylindrical portion, and [in a part comprising a porous material,]

said joining element comprising a body [shaped and dimensioned to be inserted to a first position into the blind] member disposed in said bore [with substantially no force], said body member having a first and second portion, said first body portion having a diameter about equal to said first cylindrical portion, and a second body portion having a diameter about equal to said second cylindrical portion, said first body portion having an end defining a first anchor point and comprising a first thermoplastic material [at a first preselected anchoring point at said closed inner end of said bore in said first position, and] adjacent to said first anchor point, and said second body portion defining a second anchor point adjacent to said first body portion, and comprising a second thermoplastic material adjacent to said [at a] second

[anchoring] anchor point[in said bore and spaced from said first anchoring point],

said body member being responsive to an application of pressure and of energy so as to form respective macroscopic cavities in said part at said first and second anchor points,

said thermoplastic material at said first and second [anchoring locations] anchor points being plasticizable by said[the] application of energy and pressure to [form] flow into said respective macroscopic [anchoring] anchor cavities in [connections with] said part[in said bore].

37. (Amended) A combination of [A]a joining element and a part, said part defining [for attachment in] a bore having a closed inner end and an open outer end, and [in a part comprising a porous material,]

said joining element comprising an elongated [a] body member [shaped and dimensioned to be inserted to a first position into the blind] disposed in said bore [with substantially no force, said body member having a thermoplastic material at a first[preselected anchoring] anchor point at a tip adjacent to said closed inner end[of said bore in said first position], and

a head [an enlarged] portion [forming a head] on said body member [anchoring element], said head portion being disposed at said open outer [an outside] end[of said bore in said first position],

said thermoplastic material at said first [anchoring location] anchor point being responsive to an [plasticizable by the] application of [energy and] pressure to said head portion and energy to said anchor point so as to form a

macroscopic [anchoring connection with] anchor cavity in said part at said closed inner end, and said thermoplastic material being plasticizable by said application of pressure and energy so as to flow into said macroscopic cavity, and thereby to form a macroscopic anchor connection to secure said joining element to said part[in said bore].

38. (Amended) A joining element according to claim 37 wherein said element is formed as an elongated pin and includes a second [anchoring] anchor point of thermoplastic material spaced from said first [anchoring] anchor point[and lying within said bore in said first position].

41. (Amended) A joining element according to claim 40 wherein said thermoplastic material at said anchoring points is plasticizable at a lower temperature at said [anchoring] anchor points than at other portions of said joining element.

44. (Amended) A joining element according to claim 38 wherein[an inner end] said tip of said element is shaped with a point.

45. (Amended) A joining element according to claim 38 wherein[an inner end] said tip of said element is flat or concave.